DOCUMENT RESUME

ED 462 304 SE 065 697

AUTHOR	Heimlich, Joe E.; Wang, Katy
TITLE	Evaluating the Structure of Web Sites. First Edition.
INSTITUTION	North American Association for Environmental Education, Troy, OH.; Ohio State Univ., Columbus. Cooperative Extension Service.
SPONS AGENCY	Environmental Protection Agency, Washington, DC. Office of Environmental Education.
PUB DATE	1999-00-00
NOTE	16p.; Developed by EETAP (Environmental Education and Training Partnership) Resource Library (The Ohio State University) and EE-Link.
CONTRACT	NT-902897-01-4
AVAILABLE FROM	For full text: http://www.ag.ohio-state.edu/~eetap/pdf.evalstruc.pdf.
PUB TYPE	Guides - Classroom - Teacher (052)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Critical Thinking; Elementary Secondary Education; *Environmental Education; *Evaluation; Higher Education; *World Wide Web
IDENTIFIERS	Web Page Design

ABSTRACT

This document explains the key issues related to the evaluation of the structure of Web sites. Six themes include: (1) "Purpose of Focus of the Web Site"; (2) "Audience or Target for the Web Site"; (3) "Access to Information in the Site"; (4) "Logical Design or Construction of the Site"; (5) "Visual Design or Consideration"; and (6) "Site Information." (YDS)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 462 304

Evaluating the Structure of Web Sites

Environmental Education and Training Partnership

Prepared by the EETAP Resource Library
The Ohio State University Extension

BEST COPY AVAILABLE

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

J. Heimlich

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

SE059097

Created By:
Joe E. Heimlich
EETAP Resource Library
&
Katy Wang
EE-Link
First Edition 1999

EETAP Resource Library
Ohio State University Extension
700 Ackerman Rd, Suite 235
Columbus, OH 43202-1578
phone: 614-292-6084
fax: 614-292-7341
e-mail: heimlich.1@osu.edu

A publication of the Environmental Education and Training Partnership, funded by the U.S. Environmental Protection Agency and managed by the North American Association for Environmental Education.

Table of Contents

		Page
Introduction		1
Themes		
Theme One:	Purpose of Focus of the Web Site	2 - 4
Theme Two:	Audience or Target for the Web Site	4 - 6
Theme Three:	Access to Information on the Site	6 - 7
Theme Four:	Logical Design or Construction of the Site	8
Theme Five:	Visual Design or Consideration	8 - 10
Theme Six:	Site Information	10 - 12
A Checklist for Evaluating the Structure of Web Sites		12

Introduction

As users of the internet become more adept at navigating through the web, they are beginning to refine their critical evaluation skills of the web sites that they browse. Once a user had determined that a site had met the criteria for quality content, see "Evaluating the Content of Web Sites" (EETAP, 1998), they should logically progress to evaluating the structure of web sites. Most of the information available on this topic comes from a very technical perspective and is targeted towards web designers. This document seeks to present key issues of a web site's structure from the non-technical, or low-technical, perspective of the site user.

The ideas contained in this document can also be useful to consider when building a site, especially for non-technical people who will need to communicate their needs to a technical person or team. This approach can allow the web design team to structure their site in a way that is responsive to what site users will be looking for, thereby increasing their credibility and functionality. In this manner the criteria for evaluating the structure of a web site can become part of a formula for excellence in web site design.

A few assumptions should be made clear before using this guide.

Assumptions

- Critical review of web sites does not have to take an all or nothing approach. Many web sites provide quality information, but may be lacking in other areas (usually graphic design and the overall structure of the site). But just because a site doesn't rank highly in all of the areas described here, it does not necessarily mean that the site has no value - if nothing else it can be a good example of what not to do!

- The end goal of evaluating the structure of a web site is to help teachers and students learn to be critical of the way in which information is presented on a web site. As the technology available to the general public has advanced to the point where almost anyone with a computer can (and does!) create a web site, it is important to consider the presentation of information as well as the content. This critical analysis can ultimately help students develop quality web sites of their own.

- Although examples used in this document are entirely web based, the same criteria can be applied to print and non-internet electronic media. What is important to take from this document is the formalization and consistency of the criteria used for evaluation.

- There are two different ways to evaluate web sites: an evaluation of the structure of the site and an evaluation of the content. While there are come parallel issues, these are the two substantively different forms of evaluation. This document addresses the structure of a web site, the precursor to this guide, "Evaluating the Content of Web Sites," (EETAP, 1998) can be found on the EETAP Resource Library web site: <http://www-comdev.ag.ohio-state.edu/eetap/index.html>

Themes

How people use the Web is an emerging area of study. The "novelty" of the world wide web has, for many users and students, worn off and the Internet is being increasingly used and viewed as a tool. As the way in which people use the web changes, it becomes possible to examine how individuals use the Internet and to explore ways to more effectively convey information via this electronic medium. Through review of web sites, publications, and interviews with users, the following themes were identified as central to a critical review of how a web site is structured. These themes are not meant to be presented as authoritative -- as such research is emergent in the literature. Rather these themes are offered to help teachers create age and developmentally appropriate strategies to use with students in order to construct individual, critical reviews of web pages. Six major themes grew out of the review process:

- Purpose or Focus of the Web Site
- Audience or Target for the Web Site
- Access to Information on the Site
- Logical Design or Construction of the Site
- Visual Design Considerations
- Site Information

Together, these themes create a framework for critical review of a site. The ability of the user of the web to apply critical consideration to the site itself can enhance the efficiency of use of the web. Each of these themes will be explored in the following sections of this document.

Theme One: Purpose or Focus of the Web Site
One site cannot be everything to all people without becoming too complex for any one user to navigate through it efficiently. There are several formats that a web site can take and each one warrants a specific type of presentation style. A site that is designed as an information repository will necessarily be structured differently than an interactive site, based on the different ways that users will need to move through the site and the objectives of the site itself. Identifying the purpose and focus of any web site is the first step in any critical evaluation.

Why was the site created?
Many sites provide a mission statement or an "About this Site" link from the main page. It should be clear from these pages what the objective of the site is if it is not obvious from the structure of the main page.

- *Repository for Information*
  A repository site does not contain information generated from within the site itself, but acts like a library, storing information generated by outside sources. This type of site should have a search tool for retrieving the information contained within the site, if not on the main page, then in a clearly labeled location accessible from the main page. Information on the search tool page should be clear about what is

being searched -- the site itself, external sites, or a larger search engine that has a menu so that only certain sites are searched? Since all search tools will search in a different way it is important that this information be made clear to the user, usually accomplished through "Search Tips."

- *Links Database*
  The information in a links database, or virtual library, is organized into subject areas in a hierarchical fashion (e.g. yahoo.com). This type of organization allows users to select progressively more specific descriptors to access resources on the site. As a user you want to be able to browse the links available on a site without getting into a dead-end (a page that you can't back out from), another list of links or, worse yet, a site that is inconsistent with the focus of the orginating site. As you move through the site, it should be clear what sites are being linked to and the criteria used to evaluate them. A good links database will not only review the web sites that it links to, but also provide information about the other sites, and any software that might be required to view the site properly. If the links do take you off the main site, options are often available for opening a new window to view the other site. Or frames that make the link appear in the template of the links database (this can be both good and bad since frames subsume other URLs that you visit, making it difficult to return to a particular site without going back through the original site).

- *Information*
  Information sites provide information on a particular issue or topic or on a variety of topics. The information provided on a site should have a clear connection and relevancy and is not just a hodgepodge of information that someone wanted to put on a web site (e.g. a personal "List o' Links). Again, the purpose of the site should be clear from the type of information on the site and the way it is presented. A magazine layout will look quite different from fact sheets on environmental issues and the resulting style of the information presentation should be consistent with the layout format.

- *Education*
  A truly educational site will have more than just the facts and data, but also activities and lesson plans that allow students to think critically about an issue and come to understand underlying principles. Is it clear who the target audience is for the site? Is the site truly educational or more informative? Is the information easy to retrieve and download?

- *Interactive*
  An interactive site allows users to interact with the site by selecting or inputing answers and receiving some sort of feedback from the site. Increasingly, interactive sites are requiring that users have the latest software in order to interact

with their site. Any site that must be viewed using a certain type of software program should provide a link to a "freeware" site - locations where the software is available for download, as with Adobe Acrobat - or at least to a location where the software can be purchased. It should be clear that the site must be viewed using a particular software, or if alternative versions exist for lower technology users (e.g. text only, no frames versions).

Questions About Purpose/Focus

- What is the main objective of the site? Is the mission or objective of the site easily obtained?
- If it is a repository for information, is it clear how to access that information from the main page?
- Is it clear what type and quality of information is being linked to? What criteria has been used to review links? Are the links easy to use? Do the links connect to active, relevant sites?
- Is the information clear and consistent? Does the presentation style/layout reflect the type of information on the site?
- Is it clear who the target audience is for the site - teachers or students? Is the site truly educational or merely informative?
- Is the site truly interactive? Is it clear what software is required to interact with the site? Are links provided so that users can obtain the required software? Are options made available to lower technology users?

Theme Two: Audience or Target for the Web Site

Just as one critical review point is the purpose of the web site, a second review point is the clarity of the audience. Being able to identify the audience for whom the web site was developed is central to a review process. A site developed specifically for scientists engaged in a topic will differ in both the level of cognitive language and the level of critical consideration from a site developed for a general audience. Combined and intertwined with the purpose of the site, being able to identify the target audience for a site facilitates knowing how the user will access the information and the expectations from the site.

Who is the implied audience for the site? From the homepage of a site, the user of the web should be able to identify the general audience for whom the site is developed. If the language use is highly technical, it is possible to infer that the site is designed for experts in the field, or those who are highly informed and conversant in the topic. On the other hand, if the site is introductory in its language use and structure, the site is probably oriented toward a novice. Similarly, a site that is designed with many animated graphics, lots of colors, and eye catching layout is likely oriented toward an audience that the site designers want to "grab" through appeal which suggests a site that is geared toward either entertainment of youth or sales for those with the financial capacity to buy.

Is the audience explicitly identified? A clearly designed web page will identify its target users on the home page. Sometimes, secondary pages (also called Main Topic pages) are divided by target audiences— many pages have secondary pages with buttons labeled "For Teachers" or "For Students" or a similar specific audience. To critically understand the site, it is important to be able to quickly ascertain both the implicit and the explicit audiences for a site. Consider the well practiced marketing strategy of television commercials during children's programming: the explicit audience is the child with the purpose of convincing the child that the toy or the fast food restaurant being advertised is what the child wants. The implicit audience is the parent or guardian of the child who ultimately makes the purchase decision. For informational sites, the difference might be in messages such as "take this to your teacher" or "write a letter to your congressional representative" in which the explicit user is a medium through which the implicit audience is reached.

Is the language use appropriate for the targeted audience? As with any other source of information, the language use should reflect the target audience. A technical site using introductory language will likely not be one visited by researchers in the field: jargon from any field is used by those in the field to facilitate communication with others *in* the same field. Jargon holds meaning among those who use the words in the same way and can enhance communication. Conversely, heavy use of jargon in a "general public awareness" site can harm understanding and communication. Jargon, especially statistical and research language, is often used to impress upon the reader that the writer is knowledgeable. Overly technical or jargon laden language in a site designed for youth or the general public may indicate one of several things: 1) the content is suspect and the language is being used to "hide" rather than reveal an understanding of the issue; 2) the content was developed by a person who does not understand the target audience; 3) the site is linking to technical sites without a careful review of the links or without appropriate identification of the site visitor; or 4) the site has not clearly identified its audience.

Is the design appropriate for the targeted audience? There are many web sites that are beautifully designed to impress the user. Marketing calls this the "grab" or "hook"as in the web site needs to "grab" the viewer. There is a difference between sites designed for people casually searching the web or just surfing and sites that are designed for delivering information to specific audiences. Well designed information sites are usually less fancy in terms of animated .gifs (graphics info files) and what many people refer to as "bells and whistles." A well constructed information site is attractive, but has as its focus the information in a form that is most accessible to the intended user. Valuable information should not be buried under secondary pages with cute titles— rather, the information that specific users want will be clearly identified and designed so the user can obtain the information quickly and clearly.

Identification of Bias. In science, there is rarely such a concept as "absolute truth." In web sites, this translates to the reality there is no such thing as a "non-biased" site. The purpose of the site and the audience for the site will create some type of bias. Bias does not mean a site is good or bad, rather it refers to the intentions of the site. A web page that sells furniture has a bias in that it wants people to buy the products listed/advertised on that site. Informational sites, even the very

good ones, have a bias that the user should be able to garner from the site information relevant to the user that can help the user make a decision. It should be clear what the particular bias of any site is.

Questions about Audience for the Web Site

- Who is the *implied* audience for this site? What are the indications that the site was designed for a certain type of user?
- Who is the *explicit* audience for this site? Are there clear statements that identify the targeted or intended user? Does the site provide a way for the user to know who the site is for and how the information is to be used?
- Are the implied and explicit audiences the same? Does it make a difference for the information on this site? Does this make a difference in how the site could be used for information purposes?
- Does the design fit the intended user? Is the design "hiding" its purpose from the audience or clearly revealing who it is for and why?
- Are secondary/main topic pages and subsequent levels identified in clear terms?
- Are secondary/main topic pages identified in accordance with the audience for whom the page is designed? Is the language/label on the button explicit? Does the text succinctly identify the purpose of the secondary page?
- Is the bias of the site clear? Is the bias appropriate for the intended user of the site? Does the bias affect the way in which the audience will use the information?

Theme Three: Access to Information

There are many occasions in which the technology supporting the web provides a forum for interaction or true exchange of information or ideas. However, most web sites are providers of information and resources. A link to the author of the content or the developer of the web page, or even a pop-up survey for response does not make the site itself interactive or educational. This concept relates to the idea of education being a process and a cognitive/affective internal activity of the individual; Web sites are primarily designed to convey content— information, resources, activities, ideas, marketing, or a host of other types of information. Knowing that a site is a source for information makes it possible for the user of the web to critically consider how effective a site is on providing access to the content or the information that is contained on the site.

The Rule of Two. Different studies of users of the Internet have identified some trends relating to users' willingness to look for and search out information. Some studies vary on the number depending on the intent of the user, but a good rule of thumb to use in evaluating web sites is the rule of two. This rule suggests: **2 pages; 2 screens; 2 clicks; 2 ways**. When conducting a search, a user of the web is only likely to look at the top *2 pages* of "hits" the search reveals which translates on most search engines to the top twenty sites. Some research suggests that

individuals are likely to look at no more than three of these twenty sites— and most people look at the highest hits without skimming the other sites to see if there are more likely sites for what they are searching. When a user of the web goes to a link, they are not likely to look at more than *2 screens* so if a page is very heavy on text or graphics, the individual tends to not look at the bottom of the page. When using links from a home page, most users will only use *2 clicks* to find information unless they know exactly what they are after and are sure they can find the resource below those two clicks (the first click is to the secondary or main topic page and the second click is to the tertiary or subsidiary page); some researchers have found users will go up to five clicks for specific resources or information, but usually not more than three. The "two" rule is good for evaluating web pages knowing that many visitors to a site are exploring for information rather than seeking specific resources. The fourth "rule of two" relates to the ability of the user to access the information or subsidiary pages in more than one way or *2 ways*. Technically this might refer to use of frames, text links, or buttons. Evaluating a web page for multiple access points to the information contained within the site can effectively use the "rule of two" to consider how efficient the site is from the perspective of the user.

Breadth of Information and Access. Another critical consideration of web sites is the breadth of information and the access to that information. Does the site provide access to a broad array of information and resources on the topic? Are links to other sites used to help the site provide depth to the information? In critical discussions, is access provided to sites with differing perspectives on the issue? Critical consideration of the breadth of information and access to diverse aspects of the content are important for evaluating the web site.

Identification of Sources. Many web sites link the visitor to other sources of information. In some cases, sites have closed links or links to information that bring the user back to the site without knowing they had gone to another site for information. Critical review of a site should have the learner/user asking "whose information *is* this?" Clearly identified links and references to sources is key to being able to claim the authority of a site. Identification of sources is key to critically being able to identify the bias of a site.

Questions about Access to Information

- Is all important information about the site available on the home page in less than two screens?
- Are all important documents or pages less than two clicks from the home page?
- Are there multiple access points to the information contained in the site?
- Is there a breadth of information available on the site or through links?
- Is there convenient access to information related to the site's content?
- Are sources of information clearly identified? Are there "hidden links" that might take the user away from the site to someone else's information and then back?

Theme Four: Logical Design or Construction of the Site

How a web site is constructed can make a huge difference in its functionality. While having an eye-catching main page can be a great way of getting people to into come to the site, it can often frustrate the more advanced user. An index of all the resources on the site allows users to access information on the site more quickly and is usually more detailed than the table of contents. A map of the information contained within a site can make navigating through the site easier for the more advanced user as well as the first time user, especially if it follows a logical pattern. Most good web sites organize their pages in a hierarchical manner, with one main, or "corporate" page that links all of the other pages together. Sub-pages should also follow a consistent structure and format such that topics become increasingly narrow as users move farther into the site.

Logical Design: The pages in any site should fall into some sort of a logical pattern where resources that cover similar topics are grouped together, as well as being linked to the main page. Although there are different styles for achieving this end, such as side bars or home buttons the user should always be able to get back to the main page from any page in the site. Additionally they should know where in the site they are while they're browsing as well as where they've been (usually accomplished by links that change color once they've been visited).

- Are the resources in the site organized in a way that makes sense? Can you easily get to the information you're looking for? Is there a way to search the site itself if you can't find what you're looking for?
- Can you get back to the main page from every section of the site?
- Do you know where you are in the site while you're browsing?
- Do links change color after you've visited them so that you know where you've been?
- Do the internal links go where they are meant to go?
- Is there a consistency for how users are meant to move through the site?

Theme Five: Visual Design Considerations

The visual layout of a site can make a tremendous difference to its usability. Aspects of color, font size and type, the layout of the pages, and graphics all fit into this category and should be given critical consideration when reviewing any web site.

Colors: Colors must not simply be aesthetically pleasing, but must be functional as well (for instance, dark lettering on a textured background may look good, but can be impossible to read). When reviewing a site, note whether the legibility of the text has been given proper consideration along with its overall visual appeal. Colors can also appear differently in different browsers. Try viewing web sites in Netscape as well as in Internet Explorer and see whether the web designer has tried to select colors that look good in both. If a site looks significantly better in one, does the web master tell users that the browser should be used to view the site? Do the differences justify limiting the site to one browser?

Font: Font type as well as font size should be given appropriate consideration in the design of any site. As with the colors, fonts may change depending on the browser used. Again try viewing web sites from different browsers and with different physical window sizes and see if the font size is legible across these platforms. Font sizes should also be reflective of the content of the text (headers should stand apart from the general text and side bars), and should allow the user to move easily through the text by providing visual variety.

Layout: The main page of most sites contains a map of the site, or a link to a map or index, and some information on what the site is about. Users should not have to hunt this basic information down. The general layout of each page should also be consistent throughout the site, such that links to general categories of information, or to the main page are in the same place regardless of where you are in the site. Graphics, color and text should be balanced out in the site, allowing users to visually move through the site without getting overwhelmed by information.

Graphics: The main consideration with graphics is their appropriateness to the target audience and the focus of the site. Properly done, graphic design should give the web site a consistent feel, often a template of layout style that is used on every page, and add to the aesthetic appeal of the site. If a site has lots of flashy graphics, is there an underlying rationale; something new on the site being highlighted, an interactive session, etc, and are the graphics chosen appropriate for the target audience? Web sites designed for kids or for entertainment purposes generally use a lot of blinking or scrolling graphics to draw their target audiences in. However, this same technique is usually unnecessary for a site that acts as a library or is intended for a more academic audience, where a static graphic that is topic appropriate is more useful.

The time it that it takes for graphics to load also factors into this equation. Users with older machines, or looking to retrieve information are unlikely to want to wait while a flashy graphic loads. One way that web sites can address the diversity of user needs is to offer a text only version of the site that loads quickly, or to use graphics that are small enough for browsers to cache so that users only have to wait once for them to load. Additionally, the graphics should justify the time spent waiting. Flashing icons and scrolling marquees may be effective eye catchers on the main page, but can get tiresome on every page. Can the graphics be viewed with a small browser windows without taking up the whole screen? Do tables or pictures adjust to fit into smaller windows or do you have to manually scroll to the left?

More Resources: A number of excellent sites offer technical information about web design from the design perspective that this document does not. These resources may be useful to refer to for more advanced users working on their own web pages.

- Yale C/AIM WWW Style Manual: <http://info.med.yale.edu/caim/manual/index.html>
- Sun Style Guide: <http://www.sun.com/styleguide/>
- Accessibility Web Site: <http://www.cast.org/bobby/>
- What Makes a Great Website: <http://www.webreference.com./greatsite.html#guidelines>

- Are the colors legible in multiple browsers? Does the color combination add to the aesthetic appeal of the site?
- Do the font sizes support the content of the text (headers standing apart from general text and side bars)? Does the font selection help the user to move easily through the text by providing visual variety?
- Is there an index or link to an index from the main page? Is the general layout of each page consistent throughout the site? Are graphics, color and text appropriately balanced on each page?
- Do the selected graphics serve a functional purpose? Are they appropriate for the target audience? How long do the graphics take to load - is the wait justified? Can the graphics be viewed with a small browser windows without taking up the whole screen? Do tables or pictures adjust to fit into smaller windows?

Theme Six: Site Information

In order to most effectively evaluate a web site, it is imperative that the user of the site is able to identify the source of the site itself. This relates to site information. Several questions regarding the information about the site can help a learner understand the site better.

Who sponsors the site? The first question a user should ask is who is paying for this site? Who supported the site being developed? Who maintains the site? Why are they interested in doing this? Some site designers place the mission statement of the sponsor on the home page. This is not recommended by several design texts as the mission statement is usually broad and is not of much use to the user of the site other than to get a sense of the organization or individual. This type of information is better placed in a secondary or main topic page "About the Organization" or a similar label. On the home page, however, it is important that the sponsor of the site be clearly identified, preferably in both text and image links (a logo is often used as the image link). Who the organization is, their mission, the purpose of the web site, and other relevant information should be contained within this link. A site setup and designed by an individual should also clearly be identified as such. Burying, hiding, or not including the sponsor of a site should raise questions in the user about the credibility of what will be found on that site.

Who maintains the site? Usually an individual is responsible for maintaining a site once it is online. Who this person is and how they relate to the organization or sponsor of the site is important. It is to this person that questions about the content or links would be addressed. This information may be on a Main Topic page called something like "About the Site" or "About Us." Although a link to an e-mail address is good (see below), there should be information about the manager of the site that is more than just an address. In many cases, such as agencies or educational institutions, the information about the manager of the site may be limited to a name, title, and contact information (electronic and other). In the situation of a site that is maintained by an individual for their own purposes, the information should be more comprehensive.

How frequently is the site updated? Many site managers feel it is more important to tell the user how many visitors have visited the site than it is to inform the user of when the site is/was updated. it is often more a "vanity" to show how many users have visited the site than it is truly informative about the quality or content of the site. Likewise, just a date of when the site was last updated may be useful (especially in the case of current data), but data should always be identified with a date of collection/interpretation/publication. A far more important question for the user is: is the site one that needs regular updating? If it is, how regularly is the site made current?

Some sites, such as repository sites for information or publications— those sites that are on the web for the sole purpose of having documents or databases maintained for historical or ongoing access reasons— do not have a need for regular "updating." These sites serve as on-line libraries of existing information or resources. Likewise, many databases have internal structures of maintenance and so the sites themselves may not be updated, but the information on the internal server/search engine is continually being changed. Other sites, however, and especially those with information on current topics or issues should have clearly identified maintenance/update schedules. And the site **should be** updated on that schedule. There are many documented stories of sites that have been "under construction" or pages that are "in development" for over a year. Such extensive delays in the information being changed or posted should raise a voice of caution in the mind of the user.

Does the site provide an e-mail or a talk-back link? When examining a home-page, the user should be able to identify a quick response link to the manager of the site. This is very important for questions on the content or sources of the information. Personal web pages often have this link but more for the purpose of initiating communications with other individuals with similar interests, hobbies, or concerns as the web page holder. Informational web pages need these links to allow for content source or content specific questions. These links should not be buried under several pages, but should be clearly identified on the home page.

Does the site provide technical information about the site itself. Although this is really a design consideration, increasingly sites are including Main Topic pages about the site itself. This link describes the fonts, graphics, maintenance, language, and other technical information. One area in which current research is being undertaken is that of graphics use and copyright. All written documents (including web pages and graphics) are under copyright law of the U.S. when used within the U.S. Even graphics published using a purchased directory or using the graphics packages included with a computer, should be identified as to the source. A highly critical review of a site should include asking where the graphics or images used on the site came from. The answer to such a question may create questions about the information on the site: if graphics were "taken" from another site without permission or without the user knowing permission was granted, then the user might want to question the use of information on the site itself. Many designers have not considered copyright implications in the past on the web, but the trend has changed and increasingly designers are explicit with where their graphics/images were designed and how the user is legally using these graphics/images.

Questions about Site Information

- Does the site clearly identify who sponsors the site? Is this information easily accessible? Is this information displacing access on the site? How clearly is this information presented so the user understands who the site is for and why?
- Is the manager of the site identified? Who is this person? Why is this person the manager of the site? What is this person's relationship to the content on the web pages?
- Can the user identify how frequently the site is updated or maintained? Does the site identify when it was last updated? Is it necessary to the content that the site be updated routinely?
- Are there e-mail or talk-back links directed to the manager of the web page? Is this link easily accessible and does it work?
- Does the site have a topic page or subsidiary page that provides technical information about the site itself? Does this information include platforms necessary to support access or use of the site? Are sources of images, graphics, or links identified?

A Checklist for Evaluating the Structure of Web Sites

With the above considerations, a teacher can guide students to being critical thinkers about the web pages they are using. An educator can make decisions that are age and cognitive developmentally appropriate for their learners. What follows is a "checklist" that could be used to ensure that questions have been asked by the learner. Rather than using the thematic structure from above, this checklist is constructed in a "user's structure" that asks questions as a user of the Internet would encounter the questions in a critical review of the web page.

Quality Site Examples	Poor Site Examples
Clearly stated objective and information presentation	Objective buried within the site or nonexistent, personal list - of links with no overriding theme.
Multiple platform capability	Visual design elements limited to one web browser
Clear hierarchical order, links narrow down to a topic as you move farther into the site, easy mobility back to the main page, active links	Random placement of pages, links that dead-end into a page (you can't link back into the main site), lower links don't progress logically through the site, dead links.
Appropriate limited graphics	Lots of graphics
Text links, graphic links, and button links	Frames only Text Only